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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Nelson Gonzalez et al.

Application No.: 10/689,716

Filing Date: October 22, 2003

For: MOTHERBOARD FOR SUPPORTING
MULTIPLE GRAPHICS CARDS

Art Unit: 2628

Examiner: Joni Hsu

Attorney Ref. No.: 19463-0002

Confirmation No.: 3956

APPELLANT'S SUBSTITUTE APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

COMES NOW the Appellant to present this Substitute Appeal Brief in support of the appeal of the rejection of Claims 1-7, 29, 30, 32-34, 41, 44-48 and 50-52 in the above-captioned patent application, and in response to the Notification of Non-compliant Appeal Brief mailed November 20, 2007. Appellant hereby timely submits this Substitute Appeal Brief.

It is not believed that any extensions of time are required. If, however, any extensions of time are necessary to prevent abandonment of this application or dismissal of this appeal, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and the Commissioner is hereby authorized to charge fees necessitated by this paper, and to credit all refunds and overpayments, to the Appellant's Deposit Account 50-1349.

For the following reasons, Appellant respectfully submits that the rejection of each of Claims 1-7, 29, 30, 32-34, 41, 44-48 and 50-52 in this application is in error, and therefore respectfully requests reversal of the rejections.

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I. Real Party in Interest

The real party in interest is Alienware Labs Corp., a corporation of the state of Florida.

II. Related Appeals and Interferences

There are no related appeals or interferences.

III. Status of Claims

Claims 1-7, 29, 30, 32-34, 41, 44-48 and 50-52 are pending. No claims are in condition for allowance. Claims 1-7, 29, 30, 32-34, 41, 44-48 and 50-52 stand rejected by the Office Action dated July 14, 2006, and are on appeal. Claims 2-28, 31, 35-40, 42-43, and 49 were cancelled by Applicant during the course of prosecution. The July 14, 2006 Office Action is the third Office Action received for the subject application and follows a Final Rejection dated October 25, 2005. Claims 1, 41 and 48 are the only pending independent claims.

IV. Status of Amendments

All amendments to the claims have been entered.

V. Summary of Claimed Subject Matter

The invention provides a novel and non-obvious motherboard that accepts multiple high performance video cards and coordinates those multiple high performance video cards to provide improved video performance to a display device. As described in the specification of the present application, it is highly desirable to provide a motherboard having multiple high-speed video card slots that are capable of receiving high performance video cards that can then be operated in parallel. In this way, the invention allows the leveraging of multiple standard, off-the-shelf video cards.

In this regard, independent claim 1 in particular is directed to a motherboard. The motherboard comprises a chipset for managing data transfers within the motherboard, a scalable interconnect connecting to the motherboard, and a plurality of high-speed video card slots

connected to the interconnect. The high speed video card slots include at least one first video card slot and second video card slot. The motherboard enables a first and a second video card to attach, respectively, to the at least one first video card slot and second video card slot, and the motherboard enables the first and the second video cards to operate in parallel to output graphics data to a single visual display device.

The invention of claim 1 is embodied and depicted schematically by the motherboards 600, 700, 800, 900, and 1000 of any one of FIG. 6 through FIG. 10. Each such motherboard contains a chipset (element 220 in the drawings), and the motherboard and chipset is described generally in Appellant's specification at, for example, paragraphs [00032]-[00033]. Each motherboard further includes two or more graphics card (or, equivalently, "video card") slots "each capable of supporting a commonly available, off-the-shelf video card." Spec. at par. [00024]. As depicted in Appellant's drawings, each such motherboard (600, 700, 800, 900, 1000) is connected to at least two graphics cards (670, 770, 870, 970a/b, 1070). The video cards may be interconnected via various alternative ways in the various embodiments, as described in paragraphs [00057]-[00062] of Appellant's specification and depicted in FIG. 6 through FIG. 10. For example, a x32 PCI Express interconnect may be split into two x16 connections for each of the graphics card slots (e.g., FIG. 6), or a x24 PCI Express interconnect may be split into one x16 and one x8 connections for the graphics cards (e.g., FIG. 9). The two video cards are operated in parallel to split the processing power needed to operate a single display device, and thus produce performance advantages over a single graphics card, as described at paragraphs [00011] and [00058] of Appellant's specification. In the "Field of the Invention" at par. [00004], Appellant's specification characterizes the invention as involving the "use of multiple, off-the-shelf video cards, working in parallel," while the "Abstract" at par. [00064] describes how the invention provides a motherboard with "two or more high bandwidth graphics slots, each capable of supporting an off-the-shelf video controller." Thus, each element of independent claim 1 has clear support under 35 U.S.C. § 112, first paragraph, from Appellant's original specification.

Claim 41, the second independent claim, is directed to a motherboard for supporting multiple video cards. The motherboard comprises a processor socket adapted to receive a central

processing unit (CPU), and a scalable interconnect that provides data paths to the processor socket, wherein the scalable interconnect is selectively divided as needed to allocate the data paths. The motherboard also comprises a plurality of high-speed video card slots connected to the interconnect, wherein each of the video card slots has first prespecified dimensions and is specifically adapted for coupling to a video card. The motherboard is capable of receiving substantially similar first and second video cards and facilitating parallel operation of the first and a second video cards to output graphics data to a single visual display device.

Claim 41 differs from claim 1 in pertinent respects with respect to the added recitation of a processor socket in the motherboard, the recitation that the interconnect provides data paths to the processor socket, and the recitation that the interconnect is divided to allocate the data paths. FIG. 6 through FIG. 10 each depict a CPU 210, and the specification describes the CPU and its interaction with the motherboard and other components at, for example, paragraphs [00030]-[00034]. Also, claim 42 further differs from claim 1 in that it recites that each of the video card slots has first prespecified dimensions and is specifically adapted for coupling to a video card. For example, a PCI Express interconnect (e.g., element 871) can be connected to two x16 PCI Express graphics slot (i.e., same dimensioned slots) via a switch. This particular embodiment of this claim language is described at paragraph [00060] of Appellant's specification. The remaining elements of independent claim 41, such as the motherboard, scalable interconnect, and first and second video cards, are described in the same areas of the specification identified above with respect to claim 1. In this regard, each element of independent claim 41 has clear support under 35 U.S.C. § 112, first paragraph, within Appellant's original specification.

Independent claim 48 is directed to a high performance computer. The computer comprises a motherboard, a scalable interconnect including a first and a second data paths and a first and a second video slots. The first and the second video slots connect, respectively, to the first and second data paths. The first data path is equal to or larger in scale than the second data path, and the first and the second video slots have a substantially similar physical configuration, and the video slot physical configuration is selected to allow the first and the second video slots video slots to accept a graphics card. The computer also comprises a first graphics card coupled

to the first video slot, and a second graphics card coupled to the second video slot wherein first and second video cards operate in parallel to output graphics data to a display device.

Claim 48 differs in relevant respects from claim 41 only in that claim 48 relates to a computer containing a motherboard and first and second graphics cards (as opposed to merely a motherboard with video slots for graphics cards), and that the data paths for the respective video slots can be equal or different in scale. Support for the general operation of motherboards in a computer is found throughout Appellant's specification, such as, for example, at paragraph [00030]. That the data paths for the respective video slots can be equal or different in scale is described at, for example, paragraph [00062], where the application describes how a x16, x24, or x32 PCI Express connections may be broken into various combinations of multiple x8, and/or x16 connections of equal or differing size. The remaining elements of independent claim 48 find support in the same areas of the specification identified above with respect to claims 1 and 41. All elements of independent claim 48 have clear support under 35 U.S.C. § 112, first paragraph, within Appellant's original specification.

VI. Grounds of Rejection to be Reviewed on Appeal

A. Whether Claims 1-7, 29, 30, 32-34, 41 and 44-48 are unpatentable under 35 U.S.C. § 103(a) over U.S. Patent Application No. 20040088469A1 to Levy ("Levy") in view of U.S. Patent No. 6,295,566 to Stufflebeam ("Stufflebeam").

B. Whether Claims 50-52 are unpatentable under 35 U.S.C. § 103(a) over Levy and Stufflebeam in view of U.S. Patent No. 5,546,530 to Grimaud et al. ("Grimaud").

VII. Argument

A. Introduction

In the July 14, 2006 Office Action, claims 1-7, 29, 30, 32-34, 41 and 44-48 were rejected under 35 U.S.C. §103(a) over U.S. Patent Application No. 20040088469A1 to Levy ("Levy") in view of U.S. Patent No. 6,295,566 to Stufflebeam ("Stufflebeam"). Claims 50-52 were rejected under 35 U.S.C. § 103(a) over Levy and Stufflebeam in view of U.S. Patent No. 5,546,530 to

Grimaud et al. ("Grimaud"). For at least the following reasons, these rejections are in error and should be reversed.

B. Legal Standards

Claim construction begins with the words of the claims. *Karlin Tech., Inc. v. Surgical Dynamics, Inc.*, 177 F.3d 968, 971 (Fed. Cir. 1999). Claim language should be interpreted as one reasonably skilled in the art would have interpreted the claim at the time of the patent application date. *Vivid Techs., Inc. v. American Science & Engineering, Inc.*, 200 F.3d 795, 804 (Fed. Cir. 1999); *Wiener v. NEC Elec., Inc.*, 102 F.3d 534, 539 (Fed. Cir. 1996). Where the claim term has no specialized meaning to persons of skill in the art, the ordinary meaning of the words to those of ordinary skill in the art controls, unless the evidence indicates that the inventor used them differently. *Karlin*, 177 F.3d at 971. Such evidence includes the specification and prosecution history, both of which must be analyzed to determine if the inventor limited or redefined any of those terms. *Watts v. XL Sys., Inc.*, 232 F.3d 877, 882-84 (Fed. Cir. 2000); *Vivid Techs.*, 200 F.3d at 804. If claim language is not clear on its face, then intrinsic evidence also should be consulted to resolve the lack of clarity. *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001).

Claimed subject matter is obvious in light of the prior art if it would have been obvious to one of ordinary skill in the relevant art at the time the invention was made. 35 U.S.C. § 103(a). In considering the entire prior art in the relevant field, the claimed subject matter is obvious if the prior art "would have suggested to one of ordinary skill in the art that this [invention should be made] and would have a reasonable likelihood of success." *In re Dow Chemical Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988).

In determining obviousness, the following four factors must be considered: (1) the scope and content of the prior art; (2) any differences between the prior art and the claims at issue; (3) the level of ordinary skill in the pertinent art; and (4) any secondary considerations evidencing non-obviousness, such as commercial success, copying, long felt but unsolved needs, failures of others, unexpected results, etc. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1391 (2007), citing *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966).

In *KSR*, the Supreme Court confirmed that, in evaluating obviousness, “an expansive and flexible” approach is to be taken, *i.e.*, “rigid and mandatory formulas” are improper. 82 USPQ2d at 1395-97. More specifically, the Court indicated that combining prior art elements to perform their respective established functions is likely to be obvious when it does no more than yield predictable results. *Id.* at 1395. Indeed, if a design need or market pressure to solve a problem having a finite number of identified, predictable solutions provides good reason for an ordinarily skilled person to pursue the known options within his or her technical grasp, and if such pursuit leads to the anticipated success, “it is likely the product not of innovation but of ordinary skill and common sense” and “[i]n that instance the fact that a combination was obvious to try might show that it was obvious under §103.” *Id.* at 1397. Conversely, when the prior art teaches away from combining known elements, discovery of a successful way to combine them is more likely not obvious. *Id.* at 1395.

Obviousness is not shown merely by demonstrating that each of the elements of a claimed combination was known in the art. Rather, “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine [or modify] the elements” as claimed. *Id.* at 1396. However, “any need or problem known in the field of endeavor at the time of invention and addressed by the patent” can provide such a reason, as the patentee’s particular motivation/purpose does not control. *Id.* at 1397. Also, a precise teaching of claimed subject matter is not needed, as familiar items have obvious uses beyond their primary purposes, and one must consider inferences/creative steps that a person of ordinary skill (“a person of ordinary creativity, not an automaton”) would have employed. *Id.* at 1396-97.

A long-standing obviousness test used by the Federal Circuit is the “teaching-suggestion-motivation” (TSM) test, under which a patent claim is proved obvious only if a teaching, suggestion or motivation (*i.e.*, a reason) to combine or modify prior art teachings is found in the prior art, in the nature of the problem, or in the knowledge of a person of ordinary skill in the art. *Id.* at 1391. The Supreme Court in *KSR* confirmed that “[t]here is no necessary inconsistency between the idea underlying the TSM test and the *Graham* analysis,” as long as the TSM test is not applied rigidly or narrowly. *Id.* at 1396-97. According to Federal Circuit decisions consistent

with *KSR*, the motivation/suggestion/teaching may but need not be found explicitly in the prior art, and the prior art may but need not be combined or modified for the same reasons contemplated by the inventor. *In re Kahn*, 441 F.3d 977, 987-88 (Fed. Cir. 2006) (cited with approval in *KSR*, *id.* at 1396). Furthermore, “prior art” is broader than just the references sought to be combined, and motivation may be established based upon, *inter alia*, basic principles, common knowledge and/or common sense. *DyStar Textilfarben GMBH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360-61, 1367 (Fed. Cir. 2006); *see also Aiza Corp. v. Mylan Labs., Inc.*, 464 F.3d 1286, 1291, 1294 (Fed. Cir. 2006) (decisions cited by *KSR*, *id.* at 1397, as providing “a broader conception of the TSM test” than the Federal Circuit’s erroneous application of the test in *KSR*). Regardless, however, a conclusion of obviousness should be explicitly supported by “articulated reasoning with some rational underpinning” and not “by mere conclusory statements.” *See KSR*, *id.* at 1396, *quoting Kahn*.

The circumstances under which prior art may be found to “teach away” from a claimed combination are narrow, *e.g.*, a reference must lead one in a direction divergent from the path taken by a claimed invention and not just disclose an alternative or indicate that a claimed combination resolves a different problem or is less desirable, inefficient or inferior. *KSR*, *id.* at 1399; *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1308 (Fed. Cir. 2006); *In re Fulton*, 391 F.3d 1195, 1200-01 (Fed. Cir. 2004); *Nat’l Steel Car Ltd. v. Can. Pac. Rwy. Ltd.*, 357 F.3d 1319, 1339 (Fed. Cir. 2004). Also, the “obvious to try” consideration mentioned in *KSR* dovetails with the motivation analysis in that a skilled artisan not only must have been motivated to combine or modify prior art to achieve a claimed invention, but also must have had a “reasonable expectation of success in doing so.” *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1364-69 (Fed. Cir. 2007).

The motivation inquiry begins with application of the so-called “analogous art” test. This threshold test requires that each prior art reference relied upon be either (1) in the field of the inventor’s endeavor or (2) reasonably pertinent to the problem with which the inventor was concerned, based on the judgment of a person having ordinary skill in the art. This test is related to the TSM test in that the TSM test “picks up where the analogous art test leaves off and

informs the *Graham* analysis.” *Kahn*, 441 F.3d at 987.

The level of skill in the art is determined entirely with reference to a hypothetical person of ordinary skill in the art presumed to be aware of all of the pertinent prior art. Relevant factors in determining the level of skill include the educational level of active workers in the field, the type of problems encountered in the art, prior art solutions to such problems, the rapidity of innovations in the art, and the sophistication of the technology. *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Determination of the level of skill is often critical to determinations of whether prior art is “analogous art” and whether one of ordinary skill in the art would have been motivated to combine (or modify) prior art references. *DyStar*, 464 F.3d at 136 1-63, 1370.

In order for secondary considerations evidence to be given substantial weight, the patentee must demonstrate that there is a nexus between such evidence and the merits of the claimed invention. *Ormco*, 463 F.3d at 1311-13; *GPAC*, 57 F.3d at 1580. In other words, such evidence must arise from the claimed invention, rather than from extrinsic influences such as unclaimed features, prior art features, marketing activities, etc. *Id.* (and cited cases).

C. *The Rejections of Claims under 35 U.S.C. §103 is in Error*

i. *Levy*

U.S. Patent Application No. U.S. Patent Application No. 20040088469A1 to Levy (“Levy”) relates to a bus for flexibly establishing lanes of links, thereby allowing the bus to adjust to connected devices as needed.

ii. *Stufflebeam*

U.S. Patent No. 6,295,566 to Stufflebeam (“Stufflebeam”) relates to a computer with PCI slots that configured to allow additional devices to be inserted and existing devices to be removed or relocated without restarting the computer.

iii. *Grimaud*

U.S. Patent No. 5,546,530 to Grimaud et al. (“Grimaud”) discloses a method and apparatus which allows animation information and processor power from a plurality of different sources to be combined for rendering complex graphical scenes which one machine would be incapable of doing alone. In one embodiment, Grimaud discloses a processor in the network

provided with a copy of the hierarchical tree which enables it to render a complete image. However, each processor is responsible only for a portion of the entire image represented by a subtree below a selected node. Thus, when the control computer provides the list of changed nodes, each processor need render only the portion of the image which contains the selected subtree. After the plurality of processors compute their respective images, the image data is communicated to a buffer. The buffer also receives image data from other sources. The buffer combines the image data from all sources into a single image frame which is then stored in a frame buffer.

iv. The rejection of Claims 1-7, 29, 30, 32-34, 41 and 44-48 is in error

The rejection of claims 1-7, 29, 30, 32-34, 41 and 44-48 under 35 U.S.C. §103(a) over Levy in view of Stufflebeam fails to meet the above-referenced *prime-facie* requirements for obviousness-type rejections under 35 U.S.C. §103(a). Namely, at least one of the features recited in Appellant's claims is absent from the disclosure/teaching of Levy and/or Stufflebeam, either alone or in combination with each other.

The previous Office Action stated that Levy discloses high speed video card slots including at least one first video card slot and a second video card slot. Office Action at page 3, paragraph 7. However, Levy merely states that the attached devices may include "video cards." Appellant submits that Levy fails to disclose or suggest "a plurality of high speed video card slots ...including at least one first video card slot and second video card slot," as recited in claim 1. Further, Levy does not provide any disclosure regarding the attachment and operation of two or more high speed video cards. Levy also does not provide any disclosure regarding slots for receiving multiple high speed video cards. The Office Action incorrectly interprets above quoted section from Levy as disclosing a plurality of high speed video card slots. However, Levy only suggests examples of components useable on a motherboard but does not teach or suggest the features of claim 1. In order for a reference to anticipate a claim or render a claim obvious, it must enable the subject matter that it is alleged to cover. Levy does not provide any disclosure that would enable the features of claim 1. Therefore, Appellant submits that Levy does not teach or suggest the features of claim 1 as described above.

Moreover, Appellant submits that Stufflebeam does not make up for the deficiencies in Levy. As described above, Stufflebeam merely addresses a configuration for adding or removing devices without turning off a computer. There is no suggestion in Stufflebeam that the invention further related to enhancement of motherboard design to include previously unfound features of multiple video card slots. In particular, Stufflebeam, similar to Levy, merely provides that video cards can be added to a motherboard without provided that multiple video cards can be concurrently connected to a motherboard, and that the motherboard provides multiple high-speed video card slots. Thus, the combination of Levy and Stufflebeam fails to teach or suggest the Appellant's claimed invention as recited in claim 1.

The previous Office Action also failed to adequately consider Applicants' Declaration Under 37 C.F.R. §1.132. As described in the Declaration Under 37 C.F.R. §1.132 ("Declaration") submitted April 20, 2006, the products implementing the Applicants' invention has achieved significant commercial success in the marketplace and represent a significant advance over the previous state of the art, including Levy and Grimaud. The success of these products is directly related to features claimed in Appellant's invention. In addition, as described in the enclosed Declaration, there has been significant copying of the Appellant's invention over conventional graphics systems. A copy of this Declaration is attached hereto as Exhibit A of the Evidence Appendix for the Board's consideration. While Stufflebeam is newly cited following the submission of the Declaration, the same principles still apply - that no comparable devices existed prior to Appellant's conception of the present invention as claimed and that the Appellant has had significant commercial success and copying by others. In response, the Action cites to Grimaud in support of the proposition that multiple graphic processors systems are quite known. This response fails to address Appellant's evidence that motherboards having multiple high-speed graphics slots, particularly having a scalable bus system, simply did not exist prior to Appellant's conception and commercialization of the present invention as claimed. In particular, the Action cites to a single line in the Grimaud specification regarding the addition of processors through available slots. Appellant readily admits that multiple graphic processor systems are known and existed prior to the conception of the present invention, but argue that these systems

used multiple processors on a single slot (i.e., multi-processor video cards) or where processors resided on the motherboard, and one or more additional processors where added through a single slot. Even, assuming, *arguendo*, that multiple graphics processors may be connected to a motherboard via expansion slots, this does not address the present invention's claimed multiple high-speed graphics slots. As discussed in the Declaration, this advancement did not exist prior to the present invention, provides significant technical benefits, has been meet with significant commercial and critical success, and has been widely copied.

In view of the foregoing, Appellant requests reversal of the rejection of claims 1-7, 29-34, 41, 42 and 44-48.

v. The rejection of Claims 50-52 is in error

Claims 50-52 were rejected under 35 U.S.C. §103(a) over Levy and Stufflebeam in view of Grimaud. Appellants respectfully submit that Grimaud fails to make up for the above-noted deficiencies of both Levy and Stufflebeam.

As described above, Grimaud specification contains a single passage regarding the addition of graphics processors through available slots. There is no further suggestion or teaching in Grimaud that the computer contains multiple high-speed video card slots. As previously presented, "video card slot" has a very well defined meaning in the computer industry (not merely a slot for accepting a video card), and none of the three cited references contain the feature of multiple video card slots. Thus, it is submitted that the combination of Levy, Stufflebeam and Grimaud fails to teach or suggest the features of claims 50-52.

VIII. Conclusion

For at least the foregoing reasons, Appellant respectfully submits that the subject matter of Claims 1-7, 29, 30, 32-34, 41, 44-48 and 50-52, each taken as a whole, are patentable. Accordingly, Appellant respectfully requests reversal of the rejections of Claims 1-7, 29, 30, 32-34, 41, 44-48 and 50-52 under section 103(a).

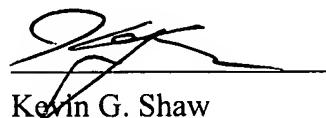
Further, it is noted for the record that this Substitute Appeal Brief is responsive to the Notification of Non-compliant Appeal Brief mailed November 20, 2007. All errors in

Appellant's original Appeal Brief indicated on the Notification have been addressed by this Substitute Appeal Brief, including the addition of an indication regarding the status of all claims, the addition of appropriate references to the specification in support of the independent claims, and the addition of evidence cited in the original Appeal Brief and previously made of record during prosecution.

Appellant wishes to MAINTAIN this appeal, and requests prompt docketing of this application for appeal by the Board and notice setting forth the date for the previously requested oral hearing.

Respectfully submitted,

Dated: December 20, 2007



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APPENDIX: CLAIMS ON APPEAL

Claim 1. A motherboard, comprising:

a chipset for managing data transfers within the motherboard;

a scalable interconnect connecting to the motherboard; and

a plurality of high-speed video card slots connected to the interconnect, the high speed video card slots including at least one first video card slot and second video card slot,

wherein the motherboard enables a first and a second video card to attach, respectively, to the at least one first video card slot and second video card slot, and wherein the motherboard enables the first and the second video cards to operate in parallel to output graphics data to a single visual display device.

Claim 2. The motherboard of claim 1, further comprising a switch connected to said interconnect, wherein said switch distributes bandwidth from said interconnect to said plurality of high-speed video card slots.

Claim 3. The motherboard of claim 2, wherein said interconnect comprises a x16 connection, and wherein said switch distributes bandwidth from said x16 connection to two x16 video card slots.

Claim 4. The motherboard of claim 1, wherein said interconnect comprises at least a x32 connection.

Claim 5. The motherboard of claim 4, wherein said interconnect is divided into two or more x16 connections between the chipset and the plurality of high-speed video card slots.

Claim 6. The motherboard of claim 1, wherein said interconnect comprises at least a x16 connection, and wherein said interconnect is divided into a x8 connection between the chipset and each of said plurality of high-speed video card slots.

Claim 7. The motherboard of claim 1, wherein said interconnect comprises a connection having at least 24 lanes, and wherein said interconnect is divided into a x8 connection between the chipset and one of said plurality of high-speed video card slots and a x16 connection between the chipset and another of said plurality of high-speed video card slots.

Claims 8-28 (Cancelled).

Claim 29. The motherboard of claim 1, wherein the interconnect comprises a first x16 connection to the first video card slot and a second smaller-scaled connection to the ~~to~~ second video card slot.

Claim 30. The motherboard of claim 29, wherein the second connection is at least one of a x1, x2, x4, and x8 connection.

Claim 31 (Cancelled).

Claim 32. The motherboard of claim 1, further comprising a peripheral slot connected to the interconnect, the peripheral slot having second prespecified dimensions, wherein the second dimensions differs from the first dimensions.

Claim 33. The motherboard of claim 1, wherein the first dimensions of the video card slots are selected to allow a graphics card to be coupled to any of the video card slots.

Claim 34. The motherboard of claim 33, wherein the graphics card is designed to be used with a x16 connection.

Claims 35-40 (Cancelled).

Claim 41. A motherboard for supporting multiple video cards, the motherboard, comprising:

a processor socket adapted to receive a central processing unit (CPU);

a scalable interconnect that provides data paths to the processor socket, wherein the scalable interconnect is selectively divided as needed to allocate the data paths; and

a plurality of high-speed video card slots connected to the interconnect, wherein each of the video card slots has first prespecified dimensions and is specifically adapted for coupling to a video card,

wherein the motherboard is capable of receiving substantially similar first and second video cards and facilitating parallel operation of the first and a second video cards to output graphics data to a single visual display device.

Claims 42-43 (Cancelled).

Claim 44. The motherboard of claim 41, wherein each of the video card slots is configured to couple with a graphics card designed to be used with a x16 connection.

Claim 45. The motherboard of claim 41, wherein the interconnect comprises a first data path and a second data path, each of the first and second data paths connecting the processor socket to different video card slots, the first data path being equal to or larger in scale than the second data path.

Claim 46. The motherboard of claim 45, wherein the second data path comprises at least one of a x1, x2, x4, and x8 connection.

Claim 47. The motherboard of claim 41, further comprising a peripheral slot connected to the interconnect, the peripheral slot having different dimensions from the video card slots.

Claim 48. A high performance computer, comprising:

a motherboard, a scalable interconnect including a first and a second data paths and a first and a second video slots, wherein the first and the second video slots connect, respectively, to the first and second data paths, the first data path being equal to or larger in scale than the second data path, wherein the first and the second video slots have a substantially similar physical configuration, and wherein the video slot physical configuration is selected to allow the first and the second video slots video slots to accept a graphics card;

a first graphics card coupled to the first video slot; and

a second graphics card coupled to the second video slot,

wherein first and second video cards operate in parallel to output graphics data to a display device.

Claim 49 (Cancelled).

Claim 50. The motherboard of claim 1, wherein a display area of the display device is divided into first and second sections, said first video card performing graphics processing related to said first section; and said second video card performing graphics processing related to said second section.

Claim 51. The motherboard of claim 41, wherein a display area of the display device is divided into first and second sections, said first video card performing graphics processing related to said first section; and said second video card performing graphics processing related to said second section.

Claim 52. The computer of claim 48, wherein a display area of the display device is divided into first and second sections, said first video card performing graphics processing related to said first section; and said second video card performing graphics processing related to said second section.

EVIDENCE APPENDIX

At Tab A this Evidence Appendix contains a copy of an Affidavit under 37 CFR § 1.132 signed by Frank Azor on April 19, 2006. This Affidavit was submitted by the Appellant concurrently with the Response and Amendment filed April 20, 2006, and was entered into the record by the Examiner in the Office Action of July 14, 2006 at paragraph 6 in considering Appellant's April 20, 2006 filings.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/689,716 Confirmation No. : 3956
Applicant : Nelson GONZALEZ, et al.
Filed : October 22, 2003
TC/A.U. : 2676
Examiner : Joni Hsu
Title : Motherboard for Supporting Multiple Graphics Cards

Docket No. : 19463-0002
Customer No. : 24633

MAIL STOP AMENDMENT

Commissioner of Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

DECLARATION UNDER 37 C.F.R. §1.132

Sir:

I, the undersigned, Frank Azor, declare that:

1. I am Senior Vice President and General Manager of the Worldwide Product Group for Alienware Corporation ("Alienware" or "Company"). I have been with the Company for eight years. In my position as Product Group SVP, I am responsible for the development and implementation of the Company's product strategy. As such, I am knowledgeable in the area of personal computers, including motherboards and motherboard technologies.

2. I was informed that certain claims of the above captioned patent application were rejected under 35 U.S.C. §103 as being unpatentable over U.S. Patent Publication 2004/0088469 to Levy ("Levy") in view of U.S. Patent Application No. 6,557,065 to Peleg ("Peleg") and in some cases additionally in view of U.S. Patent No. 5,546,530 to Grimaud ("Grimaud").

3. By this Declaration, I am providing certain evidence relating to the commercial success of Alienware products incorporating the Applicants' technology as well as the proliferation of Applicants' invention throughout our industry.

4. Alienware is a maker of high performance computing systems located in Miami, Florida.

5. On May 12, 2004, Alienware introduced its X2 motherboard, which embodies the Applicants' claimed invention. The uniqueness of this product is its ability to house multiple, off-the-shelf x16 discrete video cards. Specifically, this motherboard has a chipset for managing data transfers within the motherboard, a scalable interconnect for connecting the motherboard, and multiple x16 video card slots connected to the interconnect. To date, the product has achieved significant commercial success, and most all desktop motherboards currently offered for sale by Alienware incorporate Applicants' claimed invention.

6. This technology drew immediate praise in the computing industry, as evidenced by the following articles:

- a. Alienware's Dual PCI-E Graphics System Uncovered, www.pcper.com/article.php?aid=43 (5/5/2004) (Exhibit 1);
- b. Alienware official dual PCI Express numbers are go, <http://www.theinquirer.net/?article=16724> (6/22/2004) (Exhibit 2);
- c. E3 2004: Alienware Video Array and X2, <http://gear.ign.com/articles/515/515363p1.html> (5/13/2004) (Exhibit 3);
- d. Alienware's Double Fisted X2 Video Array, <http://www.gizmodo.com/archives/alienwares-double-fisted-x2-video-array-016150.php> (5/12/2004) (Exhibit 4); and
- e. Alienware Supports SLI in New X2-Based System, <http://www.sysopt.com/news/article.php/3546251> (10/28/2004) (Exhibit 5).

7. Others in the motherboard industry have recognized the uniqueness of the claimed technology. For example, Iwill Corporation, a multinational producer of computer motherboards, has entered into a license agreement with Alienware, the assignee of the invention, to sell motherboards that incorporate the Applicants' invention.

8. Since Alienware's introduction of the X2 motherboard, the claimed invention has been widely copied within the computer industry. To my knowledge, every major motherboard manufacturer now includes this technology in at least one of their current offerings. Indeed,

many of these manufacturers offer the technology in multiple products. Below is a list of the top board manufacturers and the products which incorporate Applicants' technology.

Intel

ASUS P5N32-SLI DELUXE

ASUS A8N32-SLI Deluxe (SBIOS = 502)

ABIT NI8 SLI (SBIOS = M431A 10.b01)

ABIT N18-SLI GR (SBIOS = M431A 11.B02)

ASUS P5ND2-SLI (SBIOS = 0304)

ASUS P5ND2-SLI Deluxe (SBIOS = 0801)

Biostar N4SIE-A7 (SBIOS = N4SIA608.BF)

EpoX EP-5NVA+SLI (SBIOS = V6.00 PG)

Foxconn NF4SLI7AA (SBIOS = 537F1P23)

Gigabyte GA-8N-SLI Royal (SBIOS = V6.00 PG D10)

Gigabyte GA-8N-SLI Royal (SBIOS = V6.00 PG D10)

Gigabyte GA-8N-SLI Pro (SBIOS = F1)

MSI P4N Diamond (SBIOS = V1.00 BH)

P4N SLI (SBIOS = A7160 V3.0B)

MSI

AMD

ABIT K8N SLI (SBIOS = M503D 11.B07)

ABIT Fatal1ty AN8 SLI (SBIOS = AN8 13.B00)

Albatron K8SLI (SBIOS = K8SLI R1.00)

ASUS A8N-SLI (SBIOS = 1001)

ASUS A8N-SLI Deluxe (SBIOS = 1001)

ASUS A8N-SLI Premium (SBIOS = 1002)

Biostar N4SI-A9 (SBIOS = n4SLIA422.BS)

ECS KN1 SLI Extreme (SBIOS = KN1S10.BIN)

ECS ECS KN1 SLI Lite (SBIOS = V1.0B)

DFI Lanparty NF4 SLI Infinity (SBIOS =V6.00PG)

DFI Lanparty NF4-SLI-DR (SBIOS =20050119)

Epox EP-9NPA+SLI (SBIOS = V6.00PG)

eVGA 133-K8-NF41-AX (SBIOS = E4.2)

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Foxconn WinFast NF4SK8AA (SBIOS = 538W1D18)

Gigabyte GA-K8N Pro-SLI (SBIOS = F4)

Gigabyte GA-K8NXP-SLI (SBIOS = F4)

Gigabyte GA-K8N-SLI (SBIOS = E1)

Jetway 775GT4-G (SBIOS = 75GT4L06)

Jetway 939GT4-SLI (SBIOS = N8GT4L08)

MSI K8N SLI Platinum (SBIOS = V6.00 PG)

MSI K8N Diamond (SBIOS = V6.00 PG)

MSI K8N Neo4 Platinum/SLI (SBIOS = V6.00 PG)

Foxconn NFPIK8AA-8EKRS (SBIOS = 49LF004B)

IWILL DK8EW (SBIOS = DK8EW111)

MSI K8N Master2-FAR (SBIOS = W9620NMS V0.10)

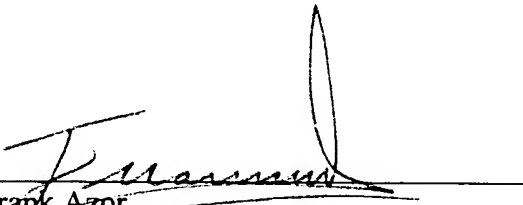
Tyan Thunder K8WE [S2895] (SBIOS = CKS:75DD)

ATI CHIPSETS

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Asus	<u>A8R-MVP</u>
DFI	<u>LANPARTY UT RDX200 CF-DR</u>
ECS	<u>KA1 MVP (1.0)</u>
MSI	<u>RD480 Neo2-FI</u>

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section §1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity if the application or any patent issuing thereon.


Frank Azor
Senior Vice President & General Manager
Alienware Corporation Worldwide Product Group

4/19/2006
Date

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Alienware's Dual PCI-E Graphics System Uncovered

Author: Sean Pelletier

Date: May 15, 2004

Subject: Graphics
Card

Manufacturer:
General

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Introduction

After walking through the isles of E3 in search of something to make our jaws drop, we came across Alienware's booth and their new ALX brand of uber gaming systems. Given Alienware's reputation of producing gaming rigs based upon the fastest hardware available, we had high expectations for the new products. For the first time at E3, a company managed to beat our expectations and leave our jaws on the showroom floor.

All the technology seen at the show was a staple of a new product line for Alienware. The new ALX brand of gaming systems will cater to the cutting-edge enthusiast who needs the fastest hardware money can buy. Looking at the specifications for these new systems, it seems as though Alienware will be able to satisfy even the most discerning gamer.

The first ALX system consumers will see will be based upon the new upcoming Intel platform. In an effort to ensure the ALX brand lives up to its name, Alienware will be overclocking every component within the system direct from the factory. Enthusiasts yearning to push the envelope can now sigh with relief as the envelope will be as far as possible while still being covered under warranty. Given how the boost in speed will result in increased temperatures, the ALX models will also feature a custom watercooling system courtesy of an unnamed company. This new watercooling system will be integrated into a new case design which is sure to illustrate the fact that this is no ordinary Alienware system. That is, if any rig from Alienware can be depicted as "ordinary".



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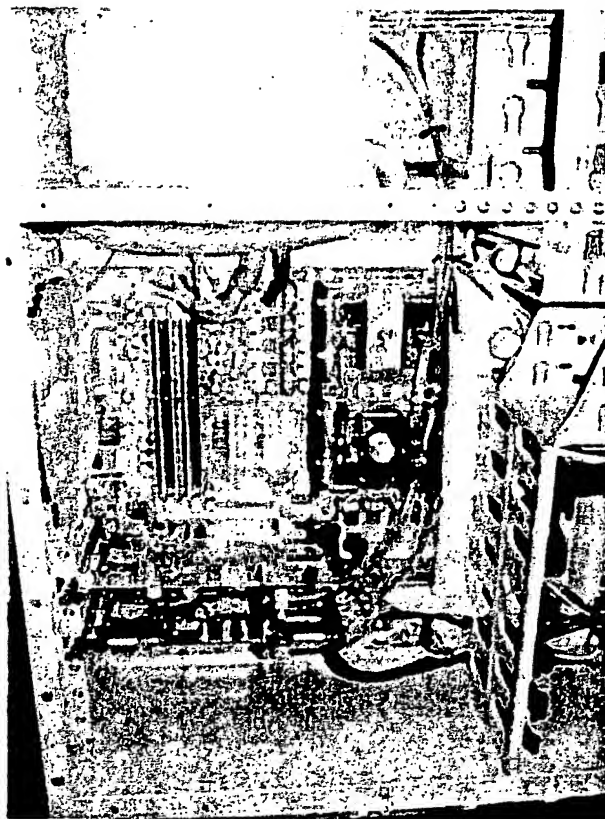
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This is a current mock up of what Alienware's liquid cooling setup might look like when it is released.



The outside of the ALX cases looks somewhat familiar with the addition of cooling components up top.

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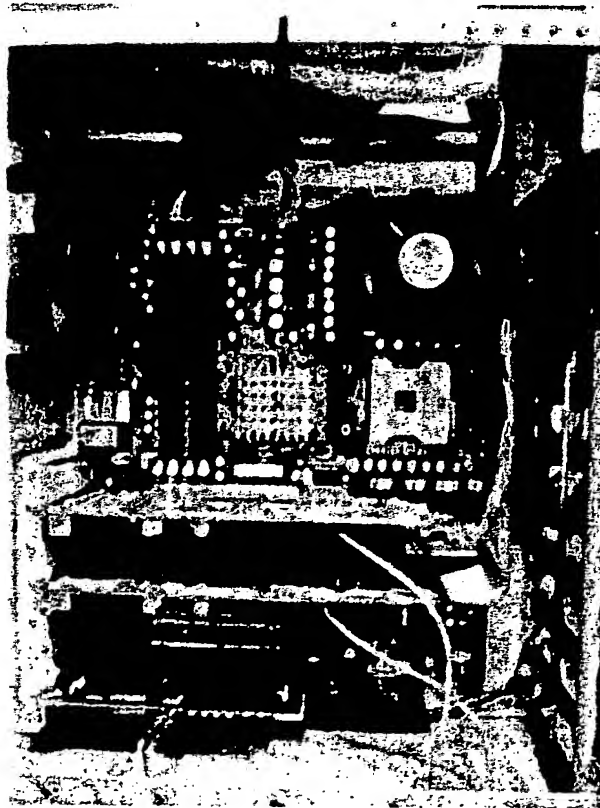
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Although the first ALX systems certainly seem impressive, it is the Video Array system found on the following model which has the potential to take performance to a whole new level. In short, the patent pending Video Array is a system which utilizes two PCI-Express graphics cards to maximize performance. Although seeming alarmingly similar to the famous SLI technology found on Voodoo cards of old, the new Video Array system takes a totally new approach. Here, each graphics card is responsible for rendering a specific portion of the screen. Typically, the screen is divided into two horizontal halves. The job of rendering each portion is then dictated to the appropriate card by a "video merger hub". This hardware component is able to take signals from the default video drivers and can allocate responsibilities to either graphics card. Overall, the separation of workload is hoped to increase performance more than 40% over typical platforms in most applications. This performance advantage is said to increase according to how taxing the application may be. Doom 3 and Half-Life 2 fans rejoice as this new system seems custom tailored to these titles.



The inside of the demo machine, running two NVIDIA 5900 Ultra cards on PCI Express. The red and blue cables connect to the PCI card at the bottom that is used as the "video merger hub."

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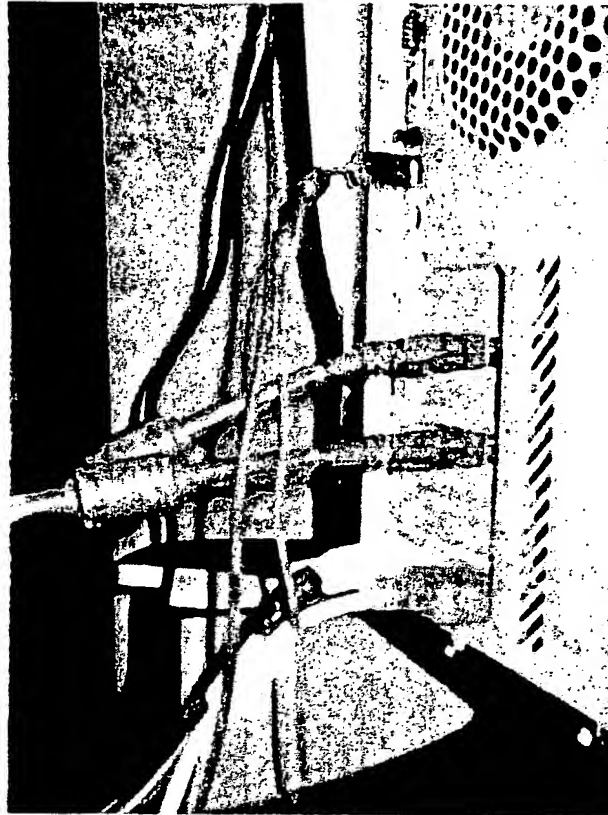
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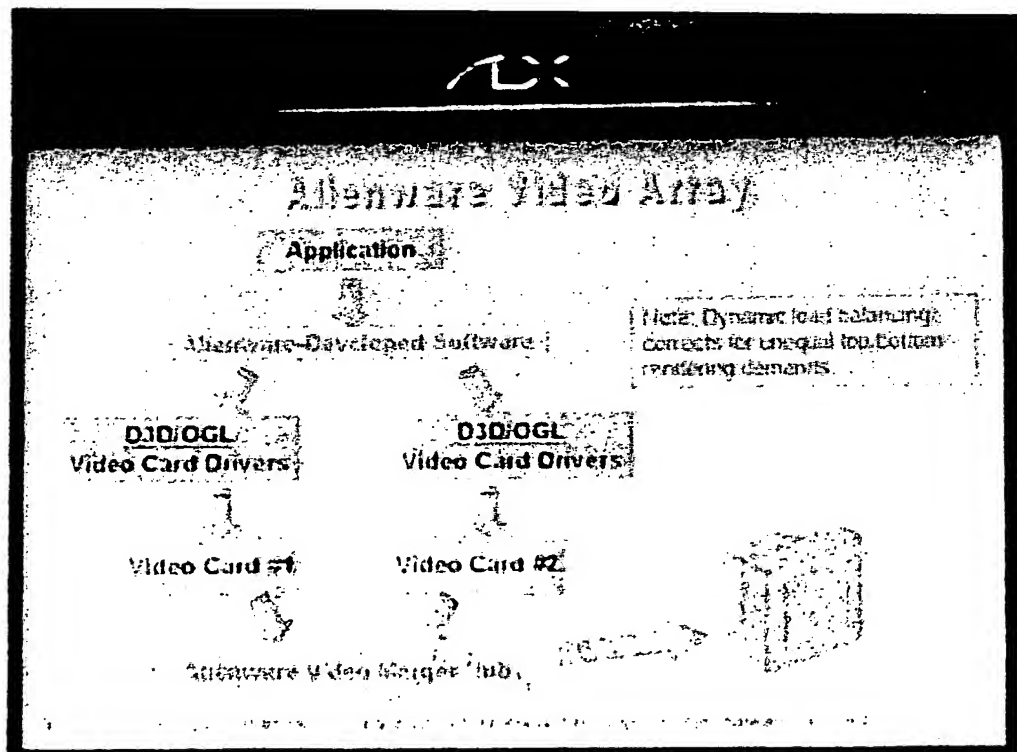
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Notice the "merger" used is analog, to facilitate the massive amounts of data that need to be combined. The two PCI Express cards output into the PCI card, then the PCI card outputs to your monitor.



A quick diagram from Alienware with a high level look at their new technology.

For a quick 1 minute video of the demo that we saw, [click here](#). Its just

over 1.3 MB in size.

In case you can't hear the speaker, it shows a system running the dual PCI-E setup, without the "video merger", thus we are seeing two "half image" on two seperate screens. The next parts shows the image being combined, running on Quake III. When he goes behind the computer, he disconnects either of their video cables in order to show only half the screen being rendered at one time.

Many might be wondering why other system vendors aren't following a similar pattern by using a dual-card graphics solution. Seeing as there are no motherboards available or planned by any vendors which feature the necessary lanes to accommodate two graphics cards without sacrificing other ports, any effort to do so would have to be custom made for this system. Alienware has done just that, designing a board around the upcoming Intel "Tumwater" chipset. Using either single or dual processors and supporting a wealth of DDR2 memory, performance should not be an issue. However, one aspect of this new system which is certainly an issue of importance is power dissipation.

Given how the flagship system will feature two power hungry processors and two power hungry graphics cards, Alienware will be forced to upgrade the power supply and cooling solutions as well. Here, a custom power supply will provide a dizzying 800W to 1KW of power to keep the system running. The fore mentioned watercooling system will ensure that temperatures are kept at an acceptable level.

Although we were able to see the Video Array system in action powered with PCI-Express versions of NVIDIA GeForce FX 5900's, the design is still in its early stages. Despite having some considerably high expectations for performance, the glimpses we've seen of the technology makes it seem up to the challenge of moving the bar upwards. Whether the bar will be moved the amount Alienware is shooting for remains to be seen. Regardless, with the system expected in time for the holiday season we will all see first hand how far Alienware is able to push the envelope.

Here is the official press release from Alienware on this technology:

Alienware Announces Video Array™ and X2™: An Exclusive Advancement in PC Graphics Technology

High-Performance PC Manufacturer promises significant performance improvements in gaming and graphics intensive applications.

MIAMI, FL May 12, 2004 - Alienware, the leading manufacturer of high-performance desktop computers, notebooks, and professional systems unveiled today at the Electronic Entertainment Expo, Video Array and X2 -- an exclusive, patent pending technology designed to significantly enhance the performance of graphics intensive applications including extreme gaming, professional design and engineering, real-time rendering and animation, and flight training and simulation modules.

Video Array is an accelerated graphics processing subsystem that will allow users to add multiple, off-the-shelf video cards to their Alienware computer systems and have both cards process graphic commands in parallel. Understanding the wide-ranging wants and needs of its customers, Alienware designed its solution so that it is not tied to any one specific video card. This design will allow users to take full advantage of the fastest video card on the market for a significant performance increase.

Alienware's exclusive Video Array combined with X2, an Alienware designed motherboard which is currently based on Intel Corporation's next-generation chipset and will include dual PCI-Express high performance graphics card slots, will deliver significant performance gains over current graphic solutions. The new Video Array Technology and X2 motherboard will enable users to run graphics intensive applications flawlessly at maximized settings, render 3D visuals in record time, and much more.

"Innovation has always been one of our guiding principles," said Nelson Gonzalez, Chief Executive Officer of Alienware Corporation. "This new technology continues Alienware's commitment to innovation and is only one of the many exciting technologies and products from Alienware."

"Alienware has dedicated significant resources into our research and development team, focused on technology and innovation. We are confident that this new solution will dramatically impact the enthusiast market and further establish Alienware as the definitive high-performance leader," said Humberto Organvitez, Executive Vice President and Chief Technology Officer of Alienware Corporation. "Our goal is to set the standard for all other performance-based PC manufacturers to follow."

The Alienware Video Array and X2 motherboard will debut in Q3/Q4, exclusively through Alienware's new ALX brand, a family of extreme performance systems catering to the demands of the most hardcore PC enthusiasts. ALX systems will be sold only in the United States, directly through www.alienware.com/alx or 1-800-ALIENWARE.

ABOUT ALIENWARE CORPORATION - Alienware Corporation manufactures high-performance computer desktop and mobile systems and leading-edge professional systems. Alienware offers unique and award-winning products that incorporate state-of-the-art components, innovative engineering and design, and unprecedented customer service. Alienware systems are available direct within the United States and Europe. For more information, please visit www.alienware.com or call 1-800-ALIENWARE (254-3692).

Alienware, the alien head logo, ALX, Video Array and X2 are the registered trademarks or trademarks of Alienware Corporation. The Video Array and X2 products are subject to various pending patents.

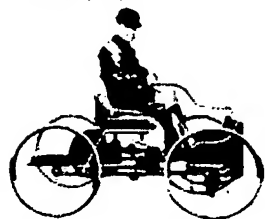
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Alienware official dual PCI Express numbers are go

Dual PCI-E cards kicks single card's butt. Yaroo!

By Fuad Abazovic: Tuesday 22 June 2004, 08:51

AN AMAZING SEVENTY SEVEN per cent boost is what you will get if you use special Alienware X2 Fab. B motherboard and plug two NV45 cards inside, the firm is claiming. The test Alienware machine had Xeon 3400 MHz, 1GB or memory and modest 80 GB hard drive.

The firm tested two NV45s versus one and the two cards worked in parallel mode, something the firm has patented.

At 1600x1200 8X Anisotropic and 8X FSAA in 3dmark 03 it claims to have got this marvel seventy seven per cent boost in the overall score - from 1758 with single card to 3105 marks with two NV45s.

In a second game the two cards were 100 per cent faster than a single card and Mother Nature gained from 16.12 to 32.16 while fill rate single and multi texturing rate were hundred percent faster. With 8X Anisotropic and no FSAA it's claimed you will get a forty two per cent increase from 5992 to 8532 marks.

It's natural that you have to load cards with hard task such as 8X FSAA and 8 Anisotropic to show the real potential of two high graphics cards in a real light.

The numbers are supplied by Alienware itself, but cannot wait to test this platform. We know it will come at a price e but we don't think anything can be faster then this. µ

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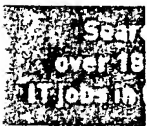
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E3 2004: Alienware Video Array and X2

by M. Wiley

May 13, 2004 - Everyone knew that Alienware was going to show something big at E3, but the company caught everyone off guard with its Video Array and X2 announcement. I got a chance to see the new technology running this morning and I was floored. The few other journalists at the demo were equally impressed. It's no secret that Alienware builds outstanding machines, but this is a genuine tech innovation. The company reps were extremely vocal about Alienware's commitment to enhance the gaming experience. And the new technology will certainly do that.

While the technology is complicated, the idea is fairly straightforward. Take the rendering workload and split it between two video cards. That's it. The specially made motherboard is called the X2. It is based on an upcoming Intel chipset. Ultimately, Alienware will offer both AMD and Intel versions of the X2. As you can see in the pics, it is a dual processor board. More importantly, it has two PCI-Express graphics slots. This is where the video array comes into play.

The scheme involves two video cards – they don't have to be identical cards – and a tertiary PCI card. The outputs from the video cards run to the third card, which sends the signal to your monitor. Basically, each card renders one-half of the scene and then throws it to the array card, which assembles the final image.

At the demo they had two systems. One system showed the outputs running to two monitors. Each monitor showed half the scene; one had the top half and one had the bottom half. The second system was showing the final output, fully assembled. There were no noticeable artifacts on the final image. It looked as if the game was being rendered by a single card - except that it was running extraordinarily quickly.

As for an increase in performance, the reps were saying that they were already seeing a 50% boost. The technology is still being tuned, so expect to see even greater performance.

The X2 mobo and Video Array technology will be available in Alienware's new ALX family of computers. System should start shipping Q3 or Q4 2004, which isn't soon enough for us. Prices have not been announced.

The importance of this innovation cannot be overstated. It is a refreshing approach to rendering power and could drastically change the PC gaming experience.



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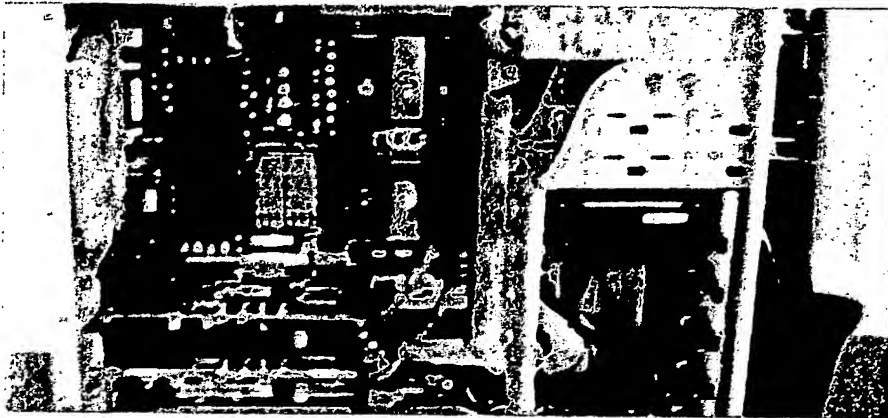
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GIZMODO

WEDNESDAY, MAY 12 2004

Alienware's Double Fisted X2 Video Array

filed under peripherals



When I heard about Alienware's announcement of their upcoming X2 Video Array system, I was so surprised that flies hatched from larvae inside my body and flew right out of my genitals. First of all, Alienware's system is two things, really: the X2 motherboard, based on Intel's Tumwater chipset that includes two PCI-Express slots (PCI-Express is essentially the new hot version of AGP), and the 'Video Array' technology, which somehow harnesses the power of two video cards working in tandem that Alienware is claiming will result in performance gains of up to 50% over a single-card solution. So, uhm, *how?* It's not an unheard of trick--the old 3dfx Voodoo 2 had a dual-card mode--but from what little I grok about modern pixel shaders and the like, it's not possible for the Video Array to do the same ol' SLI "line for me, line for you" sharing that the Voodoo did. If any hot shot game programmers would like to explain to me how they think this could be working, I'd be happy to listen.

Don't expect the system to come cheap, either. Considering the price of a 'stock' Alienware PC, these could be up in the \$5k-\$6k range (although I'm just speculating). Oh, and they won't license the tech to other vendors, they say.

Also, the picture above links to the full-size image captured by the Gizmodo E3 floor team, just in case you want to get in there and look at the dirty details.

Read - Q&A With Alienware [HomeLan via Blues]

Read - Alienware Press Release

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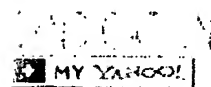
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SysOpt > News > Alienware Supports
SLI in New X2-Based System

Alienware Supports SLI in New X2- Based System- Page 1/1

October 28, 2004

By Christopher Saunders

Alienware said it will soon offer its
top-of-the-line Area-51 ALX system
with support for NVIDIA's SLI --
making the Miami-based PC maker the
first to offer systems compatible with
the multi-GPU technology.

Developed by graphics processing
giant NVIDIA, SLI, or Scalable Link
Interface, enables a chipset to support
up to two graphics cards -- delivering
dramatically enhanced system
performance, since both cards can
work in sync to share the graphic
processing load. NVIDIA has said the
increased performance can be as
much as 100 percent.

SLI owes much of its magic to its use
of the PCI-Express bus, which offers a wider data pipe than AGP (two to four times AGP 8X's
speeds.)

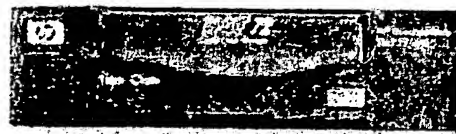
NVIDIA recently announced its own nForce4 chipset, which provides support for both PCI-E
and SLI -- and Alienware relies on dual NVIDIA GeForce 6800 Ultra PCI-E cards (with 256MB
DDR3) to provide the graphics power behind the ALX.

However, the new machine isn't based on nVidia's new nForce4 platform. Instead, Alienware
has opted to go with its own X2 motherboard in the ALX, which also sports the Intel Xeon
processor at 2.8GHz to 3.6GHz w/ EM64T 800 MHz FSB w/1MB Cache.

The move means that Alienware may trump other PC makers in getting an SLI-compatible



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machine out the door -- it's slated for shipping during the first week of December at the earliest.

"Alienware is once again living up to its tradition of allowing customers to experience breakthrough technologies ahead of all other system manufacturers," said Robert Lusk, vice president of sales and marketing for Alienware. "The Area-51 ALX combines SLI technology with the exclusive Alienware X2 motherboard to produce a truly unprecedented graphics environment for even the most demanding applications."

Alienware's X2 design also offers 1GB to 4GB of dual-channel DDR2-400MHz memory, six ports for SATA RAID 0, 1, and 0+1 configurations, and a massive 1,000-watt power supply.

The move also is a boost for X2, which Alienware is hoping to license to other motherboard manufacturers. Already, iWill USA has signed a licensing agreement.

However, Alienware evidently isn't tied into supporting NVIDIA's SLI -- since it's thought that the patent-pending X2 system -- which includes technology like Alienware's accelerated graphics processing subsystem, Video Array -- also is compatible with multiple vendors' graphics processing units.

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